Mr. Davis
Algebra II Delta & Eta

Algebra 2
Piecewise Functions

Name:_____
Period:____

1) Make a table of values for the function y = 2x – 1 including the points x = -3, -2, -1, 0, 1, and 2. Graph the function y = 2x – 1 on the first graph, making sure to graph the points to the right exactly.

x	y
-3	
-2	
-1	
0	
1	
2	

2) Make a table of values for the function y = -x + 3 including the points x = 0, 1, 2, 3, 4, 5, and 6. On the second graph, graph the function y = -x + 3, making sure to graph the points to the right exactly.

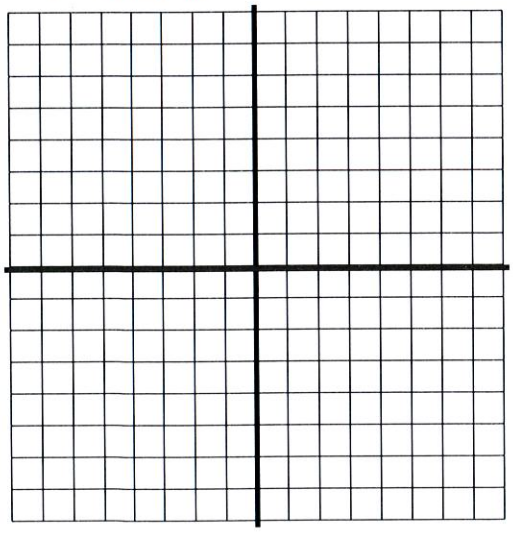
x	y
0	
1	
2	
3	
4	
5	
6	

3) On the first graph, draw two vertical lines: x = -2 and x = 1. Cut your graph out. Then cut along the vertical lines you drew at x = -2 and x = 1, creating three pieces. Place the piece between x = -2 and x = 1 (the middle piece) on the blank graph below and glue it so that you have the graph of y = 2x – 1 between x = -2 and x = 1. Discard the remainder of the graph.

4) On the second graph, draw two vertical lines: x = 1 and x = 5. Cut your graph out. Then cut along the vertical lines you drew at x = 1 and x = 5, creating three pieces. Place the piece between x = 1 and x = 5 (the middle piece) on the blank graph below and glue it on the same graph that has the piece of the graph y = 2x – 1 so that you have y = -x + 3 from x = 1 to x = 5. Discard the remainder of the graph.

5) On the graph below, you have graphed the piecewise function

$$f(x)=\begin{cases}2x-1, \text{ if } -2\le x<1\\ -x+3, \text{ if } 1\le x\le 5\end{cases}$$

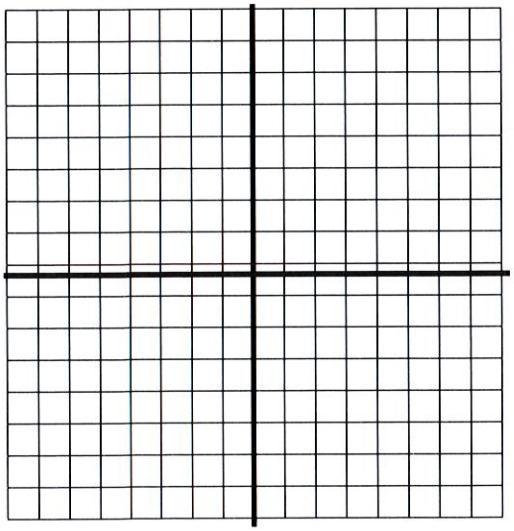


6) On a new set of graphs, go through the same process you just did with the piecewise function $f(x)=\begin{cases}3x, \text{ if } 0<x\leq 2\\ 6, \text{ if } 2<x\leq 4\\ -x+10, \text{ if } 4<x\leq 6\end{cases}$.

x	y

x	y

x	y



7) On a new set of graphs, repeat the process one more time with the piecewise function $f(x)=\begin{cases}-2x+4, \text{ if } x<0\\ \frac{1}{2}x+4, \text{if } 0\leq x\leq 3\end{cases}$.

x	y

x	y